10. Why are economic theories and principles imprecise? Shouldn’t they apply to everyone?

The main reason is that they are generalizations relating to economic behavior or the economy. The economic facts used to develop the theories and principles differ from person to person or economic institution to institution. They reflect tendencies or averages across large groups that may not apply to a particular individual. For example, if the price of a product drops significantly, the quantity demanded among consumers as a group is expected to increase, but some consumers may not increase their purchases. [text: E p. 6; MA p. 6; MI p. 6]

11. Explain the importance of the *ceteris paribus* or “other-things-equal” assumption.

Because economics is concerned with real-world behavior, it is impossible to develop theories about economic relationships in a laboratory setting where the variables of interest could be isolated. Economists try to analyze changes in the variables of interest by finding ways to hold “other things constant or equal.”

Thus, the *ceteris paribus* assumption is made to indicate that these other variables are not changing or affecting the variables of interest. For example, the theory of consumer demand states that price and quantity demanded are inversely related; people will buy less at higher prices than they will at lower prices. But this theory assumes that other variables that might affect quantity demanded are not changing. This assumption is the *ceteris paribus* assumption. [text: E p. 6; MA p. 6; MI p. 6]

16. Below are six statements. Indicate whether each one pertains to microeconomics (MIC) or macroeconomics (MAC).

(a) “Last year, IBM was the U.S. business with the most patents registered with the U.S. government.”

(b) “The U.S. economy grew at an annual rate of 4.2 percent last year.”

(c) “Snow in the northeast has reduced the number of holiday shoppers at clothing stores and clothing prices are falling.”

(d) “More workers are being hired by the nation’s businesses.”

(e) “The U.S. economy imported more goods and services than it exported last year.”

(f) “New discoveries in medicine are leading to strong growth in the biotech industry.”

(a), (c), and (f) are micro; (b), (d), and (e) are macro. [text: E pp. 6-7; MA pp. 6-7; MI pp. 6-7]

17. Below are six statements. Indicate whether each one pertains to microeconomics (MIC) or macroeconomics (MAC).

(a) “The inflation rate in the United States hit its lowest level in the last twenty years.”

(b) “The profits of Microsoft rose 20 percent during the past quarter.”

(c) “Rains from El Nino again hit the California region causing severe flooding in farms. The prices for citrus and produce are expected to rise sharply.”

(d) “The nation’s economy grew at an annual rate of 3.7 percent in the final quarter of the year.”

(e) “The trade deficit in the United States was $20 billion last month.”

(f) “General Motors plans to spend $800 million on a new automobile plant.”

(a), (d), and (e) are macro; (b), (c), and (f) are micro. [text: E pp. 6-7; MA pp. 6-7; MI pp. 6-7]

16. What advantage does a money economy have over a barter economy?

Trade is difficult with barter because it requires a coincidence of wants. Money overcomes that problem. A buyer can obtain goods without having to locate a seller who desires what the person has to trade. All products can be priced and traded on a common basis. Also, with money, neither party needs to carry products around with them so they are always available for trade. Money facilitates the exchange of products which is necessary for specialization. Economic efficiency is improved with a system of money. [text: E pp. 33-34; MA pp. 33-34; MI pp. 33-34]

22. Assume that a firm can produce product A, product B, or product C with the resources it currently employs. These resources cost the firm a total of $100 per week. Assume, for the purposes of this problem, that the firm’s costs cannot be changed. The market prices and the quantities of A, B, and C these resources can produce are given as follows.

|  |  |  |  |
| --- | --- | --- | --- |
| **Product** | **Market price** | **Output** | **Profit** |
| A | $14.00 | 10 | $\_\_\_\_\_ |
| B | 9.00 | 11 | \_\_\_\_\_ |
| C | .50 | 300 | \_\_\_\_\_ |

(a) Compute the firm’s profit when it produces A, B, or C and enter these data in the table.

(b) Which product will the firm produce?

(c) If the price of A rose to $16, which product will the firm produce?

(d) If the firm produces A at a price of $16, what would tend to happen to the number of firms producing product A?

|  |  |  |  |
| --- | --- | --- | --- |
| **Product** | **Market price** | **Output** | **Profit** |
| A | $14.00 | 10 | $40.00 |
| B | 9.00 | 11 | – 1.00 |
| C | .50 | 300 | 50.00 |

(a) Profit for A will be $40; for B will be –$1 (loss); for C will be $50.

(b) Firm will produce product C.

(c) If the price of A rises (assuming the firm can sell all of its output at the new price), it would make a profit of $60 on A and so would produce product A.

(d) If other firms face similar costs, more firms would enter industry A to take advantage of the higher economic profits.

[text: E pp. 34-35; MA pp. 34-35; MI pp. 34-35]

30. Assume that a firm finds that its profits will be maximized (or losses minimized) when it produces $30 worth of product X. Each of these techniques shown in the following table will produce exactly $30 worth of X.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Unit resource**  **prices** | **Method #1** | **Method #2** | **Method #3** |
| Land | $1 | 6 | 3 | 4 |
| Labor | 2 | 4 | 3 | 3 |
| Capital | 3 | 3 | 4 | 6 |
| Entrepreneurship | 4 | 2 | 4 | 1 |

(a) Which method is most efficient? Why?

(b) Given the above prices, will the firm adopt a new method which involves 10 units of land, 3 of labor, 2 of capital, and 2 of entrepreneurial ability?

(c) Suppose the price of capital falls to $1 without any other prices changing. Which of the methods will the firm now choose? Why?

(a) Method #1 is most efficient because it uses relatively more of the least expensive resource, and relatively less of the more expensive resources.

(b) Yes, it is now the least-cost method.

(c) It will choose #3 because it uses relatively more of capital which is now much less expensive and the total cost of each method now makes #3 the least-cost combination.

[text: E pp. 35-36; MA pp. 35-36; MI pp. 35-36]

33. How can technological advance result in creative destruction?

Rival firms must follow the lead of innovative firms that are making economic profits. If the rival firms fail to do so, they can suffer economic losses and eventually fail or be bought by other firms. Sometimes technological advance actually destroys industries because an old product is no longer needed with a new innovation put on the market, a situation referred to as creative destruction. The innovation creates a new product, but in the process of doing so it effectively destroys an industry. One example would be the automobile which eventually destroyed the market for horse-drawn carriages. [text: E p. 37; MA p. 37; MI p. 37]

7. List five basic determinants of market demand that could cause demand to decrease. (The text mentions seven possibilities.)

(a) Consumers’ tastes become less favorable toward the item.

(b) The number of buyers decreases.

(c) Incomes fall and the item is a normal good.

(d) Incomes rise and the item is an inferior good.

(e) A decrease in the price of a substitute product.

(f) An increase in the price of a complementary product.

(g) Consumers expect lower prices in the future.

[text: E pp. 48-50; MA pp. 48-50; MI pp. 48-50]

8. Differentiate between a normal (superior) and an inferior good.

A normal (superior) good is one whose demand varies directly with income as is true for most goods and services the more income one earns, the more one is willing and able to buy. However, there are exceptions, called inferior goods, whose demand varies inversely with income. Inferior goods are those whose demand increases when incomes fall and vice versa. [text: E pp. 49-50; MA pp. 49-50; MI pp. 49-50]

13. What effect should each of the following have upon the demand for portable music players in a competitive market? Explain your reasoning in each case.

(a) the development of improved, low-priced devices that compete with music players

(b) an increase in population and incomes

(c) a substantial increase in the number and quality of music for players

(d) consumer expectations of substantial price increases in music players

(a) Would cause a decrease in demand for music players, assuming that other devices are substitutes for music players.

(b) Would cause an increase in demand because there are more consumers and they have more income to spend. This assumes that music players are a normal good and more would be bought with higher incomes.

(c) Should increase demand since increased number and quality of music’s variety of programs should make owning a music player more desirable.

(d) Should increase current demand because consumer expectations about the future have changed and may prompt them to “buy now” to beat the future price increase.

[text: E pp. 48-50; MA pp. 48-50; MI pp: 48-50]

18. List six basic determinants of market supply.

1. Resource prices; (b) Changes in technology; (c) Taxes and subsidies; (d) Prices of other related goods; (e) Producer expectations; (f) Number of sellers [text: E p. 52; MA p. 52; MI p. 52]

27. Using the schedules given, plot the demand curve and the supply curve on the below graph. Label the axes and indicate for each axis the units being used to measure price and quantity. Then answer the questions.

|  |  |  |  |
| --- | --- | --- | --- |
| **Price** | **Quantity demanded**  **(bushels of oats)** | **Price** | **Quantity supplied**  **(bushels of oats)** |
| $1.50 | 10,000 | $.90 | 40,000 |
| 1.40 | 15,000 | 1.0 | 35,000 |
| 1.30 | 20,000 | 1.1 | 30,000 |
| 1.20 | 25,000 | 1.20 | 25,000 |
| 1.10 | 30,000 | 1.30 | 20,000 |
| 1.00 | 35,000 | 1.40 | 15,000 |

(a) Give the equilibrium price and quantity for oats.

(b) Indicate the equilibrium price and quantity on the graph by drawing lines from the intersection of the supply and demand curves to the price and quantity axes.

(c) If the Federal government decided to support the price of oats at $1.40 per bushel, tell whether there would be a surplus or shortage and how much it would be.

(d) Demonstrate your answer to part (c) on your graph being sure to label the quantity you designated as the shortage or surplus.

0

10

20

30

40

$1.00

$1.50

*Q*e

*Pe*

*S*

*D*

Quantity (1000s)

Price

Surplus

5

15

25

35

(a) The equilibrium price and quantity for oats will be $1.20 and 25,000 bushels.

(b) The equilibrium price and quantity on the graph are labeled *Pe* and *Qe*.

(c) If the Federal government decided to support the price of oats at $1.40 per bushel, there would be a surplus of 35,000 – 15,000 = 20,000 bushels.

(d) See surplus labeled on above figure.

[text: E pp. 54-56; MA pp. 54-56; MI pp. 54-56]

44. Use data in the following table to explain the economic effects of a price floor at $8, at $9, and at $10. Explain the economic effects.

|  |  |  |
| --- | --- | --- |
| **Price** | **Quantity demanded** | **Quantity supplied** |
| $10.00 | 3000 | 7500 |
| 9.00 | 3500 | 6500 |
| 8.00 | 4000 | 5500 |
| 7.00 | 4500 | 4500 |

A price floor means that the price is not allowed to fall below a minimum price set by government. If the price floor is above the competitive equilibrium price of $7, a surplus of the product would result. If the price floor was set at $8, the quantity demanded would be 4000 units but the quantity supplied would be 5500 units for a surplus of 1500 units. At a price floor of $9, the surplus would be 3000 units, and with a price floor of $10, the surplus would be 4500 units. A price floor interferes with the rationing function of price that serves to balance the decisions of suppliers and demanders. The price floor that produces a surplus indicates that resources are being overallocated and that there is economic inefficiency; output is being produced which consumers do not want to purchase at the price floor. [text: E pp. 61-62; MA pp. 61-62; MI pp. 61-62]

Chapter 4

8. In what ways is the corporate form the most effective form of business?

First, corporations have a greater ability to finance the expansion of their facilities and capabilities because they can use stocks and bonds to pool the resources of a large group of people. Moreover, corporations can easily attract capital, such as bank loans and securities. Also, the limited liability structure of corporations allows owners to only risk what they invest, instead of all of their assets. Another structural benefit of corporations is their large scale, which allows them to take advantage of economies of scale and specialization for greater efficiency. Lastly, corporations benefit from the fact that their business is separate from their owners and that the sale of stock doesn’t interrupt business. This permanence lends itself to greater long range planning. [text: E pp. 75-76; MA pp. 75-76; MI pp. 75-76]

12. What is the key drawback of the corporate form? Why does this problem arise?

The principal-agent problem is the key issue facing corporations. The problem arises because the stockholders (principals) have an interest in maximizing the firm’s profits to maximize their share return. However, the stockholders are not the ones in charge of managing the firm. Rather, they hire managers (agents) to oversee the corporation’s business. The principal-agent problem can arise when managers have interests other than those of the shareholders (they could be gaining power, prestige, or pay) and don’t keep the company’s best interests in mind. [text: E pp. 77-78; MA pp. 77-78; MI pp. 77-78]

21. Demand and supply curves for products for which there are negative or positive externalities are shown in the three graphs below.

Quantity

(a)

**P**

***D***

***S***

**0**

Quantity

(b)

**P**

***D***

***S***

**0**

Quantity

(c)

**P**

***D***

***S***

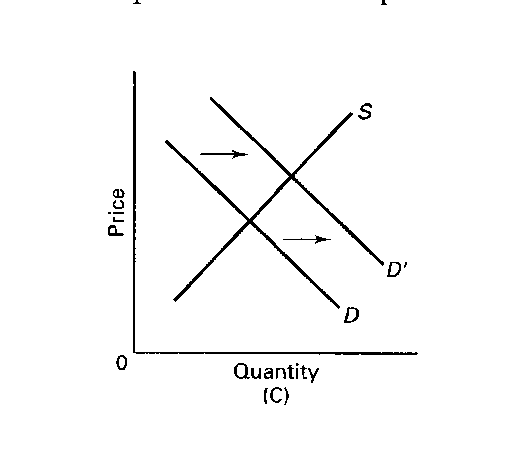
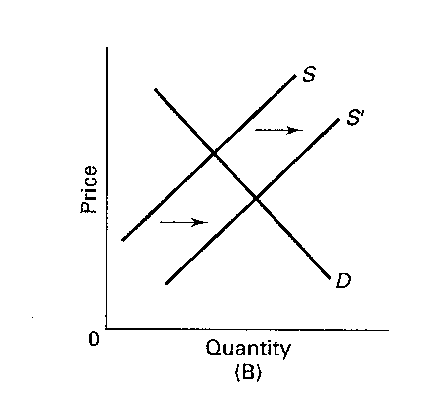
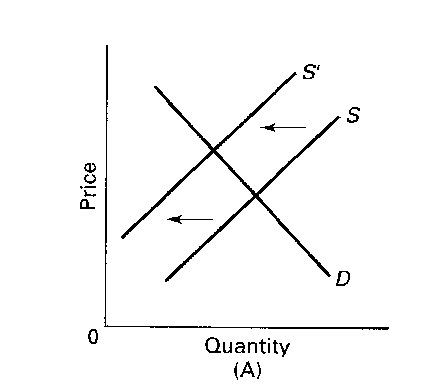
**0**

(a) On this graph draw in another curve that indicates what might happen after the producer was prevented from causing a negative externality or was forced to pay a tax to cover these costs.

(b) On this graph draw in another curve that indicates the situation after the government subsidizes the producer because there are positive externalities from this product.

(c) On this graph draw in another curve that indicates the situation after the government subsidizes consumers for this product which has a positive externality.

(a), (b), (c) *See graphs*.



[text: E pp. 79-80; MA pp. 79-80; MI pp. 79-80]

23. Why is there a free-rider problem with public goods?

Most private goods and services are subject to the exclusion principle which is the idea that those who pay for the product are the ones who get it, but those who don’t pay for it are excluded from the benefits provided by that product.

The free-rider problem exists when it is not possible to exclude a person from the benefit of a good even if the person did not pay for its costs. Such is the case with a public good. Once a public good is provided, it is available to all people regardless of whether or not they pay for its cost. [text: E p. 80; MA p. 80; MI p. 80]

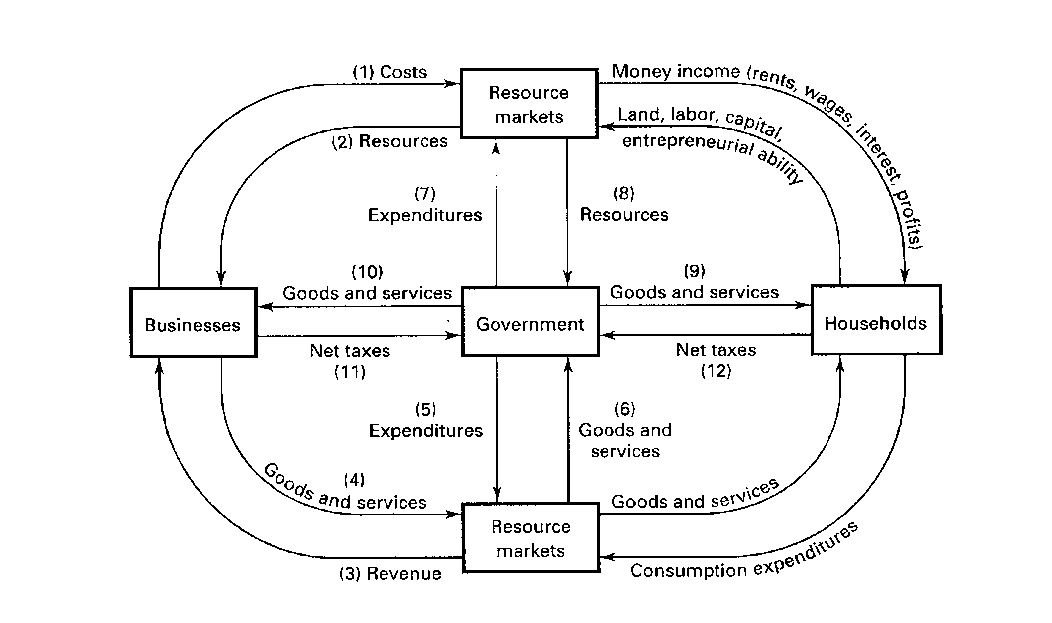
25. How do quasi-public goods differ from pure public goods? Give examples of both types. Explain the rationale as to why quasi-public goods are often provided by government rather than private businesses.

A pure public good is characterized by nonrivalry and nonexcludability. The benefits are also not reduced when one person benefits from it, so there is nonrivalry. Once this type of national security is provided, it is available for benefit by all, without exclusion. An example would be the war on terrorism. Quasi-public goods have the characteristics of both private and public goods which means that to a certain degree rivalry and exclusion do apply. Quasi-public goods such as fire protection, schools, libraries, and trash collection can be provided by private firms. The reason why such quasi-public goods are often provided by government is that there can be substantial positive externalities from them for society and if left to the market they would be underprovided or underproduced. [text: E p. 81; MA p. 81; MI p. 81]

26. Describe the two types of policies used by our government and central bank to promote full employment and price stability.

Government and the Federal Reserve Bank use fiscal and monetary policies to promote full employment and price stability. Fiscal policy uses government taxing and spending decisions and monetary policy uses central bank interest rates. Both policies may be used to address unemployment and inflationary problems resulting from unexpected shocks to the economy. [text: E pp. 81-82; MA pp. 81-82; MI pp. 81-82]

29. The circular flow diagram below includes business, household, and government sectors. Also shown are the product and resource markets. Supply a label or an explanation for each of the twelve flows in the model.

 (1) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(2) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(3) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(4) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(5) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(6) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(7) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(8) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(9) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(10) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(11) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(12) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(1) Costs; (2) Resources; (3) Business revenue; (4) Goods and services; (5) Government expenditures on goods and services; (6) Goods and services; (7) Government expenditures on resources; (8) Resource flows to government; (9) Public goods and services; (10) Public goods and services; (11) Business taxes; (12) Household taxes. [text: E pp. 82-83; MA pp. 82-83; MI pp. 82-83]

35. Given the following information on the tax paid for different levels of taxable income, fill in the average and the marginal tax rates for each income level. Also explain how to calculate the average tax rate and the marginal tax rate. Is this tax progressive?

|  |  |  |  |
| --- | --- | --- | --- |
| **Taxable income** | **Tax** | **Average tax rate, (in %)** | **Marginal tax rate, (in %)** |
| $10,000 | $1000 | \_\_\_\_\_ | \_\_\_\_\_ |
| 15,000 | 1750 | \_\_\_\_\_ | \_\_\_\_\_ |
| 20,000 | 2750 | \_\_\_\_\_ | \_\_\_\_\_ |
| 25,000 | 5000 | \_\_\_\_\_ | \_\_\_\_\_ |

|  |  |  |  |
| --- | --- | --- | --- |
| **Taxable income** | **Tax** | **Average tax rate, (in %)** | **Marginal tax rate, (in %)** |
| $10,000 | $1000 | 10 | 10 |
| 15,000 | 1750 | 11.67 | 15 |
| 20,000 | 2750 | 13.75 | 20 |
| 25,000 | 5000 | 20 | 45 |

To find the average figures divide total tax by total income. To find the marginal figures divide the change in tax by the change in income. Note that the first marginal tax rate is often excluded because the difference between no income and $10,000 here will produce the same results as the average tax rate is progressive. [text: E pp. 85-86; MA pp. 85-86; MI pp. 85-86]

Chapter 5

23. The table below shows four different currencies and how much of each currency can be purchased with a U.S. dollar.

|  |  |  |  |
| --- | --- | --- | --- |
|  | ***Currency per U.S. $*** | | |
| **Country** | **Currency** | **Year 1** | **Year 2** |
| Britain | pound | 0.50 | 0.60 |
| Mexico | peso | 6.00 | 6.50 |
| Germany | euro | 1.20 | 1.00 |
| Japan | yen | 110.00 | 125.00 |

Among which nations has the U.S. dollar appreciated (A) or depreciated (D) from year 1 to year 2? Explain the appreciation or depreciation using the nations and numbers in the table.

11. (Consider This) In both the case of the CPA painting her house and the painter filing his taxes, what is the determining factor that causes them to use professional services? What is the benefit of this specialization?

15. The countries of Macrostan and Micrastan have the production possibilities tables for sheep and hogs shown in the tables below. Without trade Macro would produce at Alternative D and Micra would also produce Alternative D. Note that the costs of producing sheep and hogs are constant in both countries.

# MACROSTAN’S PRODUCTION POSSIBILITIES TABLE

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| ***Product*** | ***Alternative*** | | | | | |
| **(lbs)** | **A** | **B** | **C** | **D** | **E** | **F** |
| Sheep | 25 | 20 | 15 | 10 | 5 | 0 |
| Hogs | 0 | 5 | 10 | 15 | 16 | 25 |

# MICRASTAN’S PRODUCTION POSSIBILITIES TABLE

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| ***Product*** | ***Alternative*** | | | | | |
| **(lbs)** | **A** | **B** | **C** | **D** | **E** | **F** |
| Sheep | 20 | 16 | 12 | 8 | 4 | 0 |
| Hogs | 0 | 3 | 6 | 9 | 12 | 15 |

(a) In Macro, the cost of producing:

5 units of sheep is \_\_\_\_\_\_ hog units.

1 unit of sheep is \_\_\_\_\_\_ hog units.

(b) In Micra, the cost of producing:

4 units of sheep is \_\_\_\_\_\_ hog units.

1 unit of sheep is \_\_\_\_\_\_ hog units.

(c) Which country has the comparative advantage in sheep production and which country has the comparative advantage in hog production?

(d) If each nation specializes in the product where it has a comparative advantage and trades with the other, what will be the limits to the terms of trade for each sheep unit?

(e) If the nations do not specialize and trade but remain at alternative D in Macrostan and D in Micrastan, the combined production of Macro and Micrastan will be how many sheep and how many hogs?

(f) However, if the two nations specialize, the combined production of Macro and Micrastan will be how many sheep and how many hogs?

(g) What will be the total gain of sheep and hogs if the countries specialize and trade?

35. Given the following information on the tax paid for different levels of taxable income, fill in the average and the marginal tax rates for each income level. Also explain how to calculate the average tax rate and the marginal tax rate. Is this tax progressive?

|  |  |  |  |
| --- | --- | --- | --- |
| **Taxable income** | **Tax** | **Average tax rate, (in %)** | **Marginal tax rate, (in %)** |
| $10,000 | $1000 | \_\_\_\_\_ | \_\_\_\_\_ |
| 15,000 | 1750 | \_\_\_\_\_ | \_\_\_\_\_ |
| 20,000 | 2750 | \_\_\_\_\_ | \_\_\_\_\_ |
| 25,000 | 5000 | \_\_\_\_\_ | \_\_\_\_\_ |

|  |  |  |  |
| --- | --- | --- | --- |
| **Taxable income** | **Tax** | **Average tax rate, (in %)** | **Marginal tax rate, (in %)** |
| $10,000 | $1000 | 10 | 10 |
| 15,000 | 1750 | 11.67 | 15 |
| 20,000 | 2750 | 13.75 | 20 |
| 25,000 | 5000 | 20 | 45 |

To find the average figures divide total tax by total income. To find the marginal figures divide the change in tax by the change in income. Note that the first marginal tax rate is often excluded because the difference between no income and $10,000 here will produce the same results as the average tax rate is progressive. [text: E pp. 85-86; MA pp. 85-86; MI pp. 85-86]

Chapter 6

11. A gasoline station very near a professional football stadium parks cars on its lot to make money on game days. Last year it charged $4.00 per car and parked 1000 cars. This year it raised the parking price to $5.00 and parked 850 cars. Did the station owner make a good economic decision in raising the parking prices from one year to the next? Explain.

The owner made a good decision in raising price. The total revenue test indicates that total revenue increased with the increase in price. The $4.00 price times 1000 cars produced $4000 in revenue, but the $5.00 price times the 850 cars produced $4250 in revenue, for a gain of $250. These results indicate that demand for parking is inelastic in this price range. The midpoints formula also shows that demand is inelastic in the price range because the coefficient is 0.73. [text: E pp. 116-120; MI pp. 116-120]

16. The following is a straight-line demand curve that confronts a single firm.

|  |  |  |  |
| --- | --- | --- | --- |
| **Price** | **Quantity demanded** | **(3)** | **(4)** |
| $6 | 1 | $\_\_\_\_\_ |  |
|  |  |  | \_\_\_\_\_ |
| 5 | 2 | \_\_\_\_\_ |  |
|  |  |  | \_\_\_\_\_ |
| 4 | 3 | \_\_\_\_\_ |  |
|  |  |  | \_\_\_\_\_ |
| 3 | 4 | \_\_\_\_\_ |  |
|  |  |  | \_\_\_\_\_ |
| 2 | 5 | \_\_\_\_\_ |  |
|  |  |  | \_\_\_\_\_ |
| 1 | 6 | \_\_\_\_\_ |  |

(a) In column 3, compute total revenue. In column 4, compute the coefficient for the price elasticity of demand at each price using the midpoints formula.

(b) Describe the character of elasticity across the prices based on the total revenue test and the elasticity coefficient.

(c) Does a straight-line demand curve have constant elasticity?

(d) Of what practical significance is your answer to (c)?

|  |  |  |  |
| --- | --- | --- | --- |
| **Price** | **Quantity demanded** | **(3)** | **(4)** |
| $6 | 1 | $6 |  |
|  |  |  | 3.7 |
| 5 | 2 | 10 |  |
|  |  |  | 1.8 |
| 4 | 3 | 12 |  |
|  |  |  | 1.0 |
| 3 | 4 | 12 |  |
|  |  |  | 0.6 |
| 2 | 5 | 10 |  |
|  |  |  | 0.3 |
| 1 | 6 | 6 |  |

(a) See the above table for the answers.

(b) Total revenue declines when price drops from $3 to $2, and the elasticity coefficient also becomes less than 1 at that price change. Demand is elastic in the range of prices between $6 and $4, and inelastic below $3. A drop in price from $4 to $3 illustrates unitary elasticity.

(c) The clear answer is “no” based on the answers in the table. Although the slope of a linear demand curve is, by definition, constant, elasticity varies because it measures percentage changes.

(d) The significance is twofold. (1) One cannot tell elasticity by looking at a demand curve because the elasticity changes over the range of the curve. (2) The elasticity of demand for any product will depend on the level of its initial price and quantity, not just on the change in price. Therefore, the demand for a product may be very elastic in one price range (generally the higher price ranges) and very inelastic in another (lower) price range.

[text: E pp. 116-120; MI pp. 116-120]

26. What is the price elasticity of supply? How is it measured?

Price elasticity of supply is a measure of the sensitivity of quantity supplied to changes in the price of a product. The price elasticity of supply depends primarily on the ease of substitution of resources between alternative uses. The easier and faster suppliers can respond to changes in price, the greater the price elasticity of supply.

There are both a general formula and a midpoint formula similar to those for the price elasticity of demand, but “quantity supplied” replaces “quantity demanded.” This means that the elasticity of supply is the percentage change in quantity supplied of a product divided by its percentage change in the price of the product. There is a midpoints formula that is an average of quantities and prices and is used for calculating the elasticity of supply across quantity or price ranges. [text: E pp. 122-123; MI pp. 122-123]

27. What is the main determinant of the price elasticity of supply? Explain.

The ease of shifting resources to alternative uses is the main one. Time is often a critical factor affecting the ease of substitution. The longer the time, the easier it is for producers to shift resources into production and increase the quantity supplied. The more time the firm has to adjust to a change in price, the greater the elasticity of supply. [text: E pp. 122-124; MI pp. 122-124]

34. Why would it be valuable for a business to know the cross elasticity of demand for the two products it produces: peanuts and popcorn?

The cross price elasticity of demand shows the responsiveness of the quantity demanded for one product to a change in the price of another product. The business can use this concept to determine whether there is a substitute, complementary, or independent relationship between peanuts and popcorn. If peanuts and popcorn are substitutes, a rise in the price of peanuts will cause an increase in the quantity demanded for popcorn (the cross elasticity will be positive). On the other hand, if peanuts and popcorn are complementary goods, a rise in the price of peanuts will decrease the quantity demanded for popcorn (the cross elasticity will be negative). The business will want to know the nature of the relationship between the two products and how responsive the quantity demanded for one product is to a change in the price of the other before a price is changed. This cross elasticity information will be useful for increasing total revenue and profits. [text: E pp. 124-125; MI pp. 124-125]

38. Use the information in the table below to identify the income elasticity type of each of the following products, A to E.

|  |  |  |  |
| --- | --- | --- | --- |
| **Product** | **Percent change in income** | **Percent change in quantity demanded** | **Income elasticity type** |
| A | 9 | 12 | normal |
| B | –6 | 6 | inferior |
| C | 3 | 3 | normal |
| D | 6 | –3 | inferior |
| E | 2 | 1 | normal |

[text: E pp. 125-126; MI pp. 125-126]

41. Define “consumer surplus.”

Consumer surplus is the benefit surplus received by a consumer or consumers through market transactions. A consumer surplus arises because all consumers pay the equilibrium price even though some consumers would be willing to pay more. Consumer surplus is measured as the difference between the maximum price a consumer is (or consumers are) willing to pay minus the actual price. [text: E pp. 126-127; MI pp. 126-127]

42. Define “producer surplus.”

Producer surplus is the benefit surplus received by a producer or producers through market transactions. A producer surplus arises because some producers are willing to sell a product at a lower price than the equilibrium price. Producer surplus is measured as the difference between the actual price the producer receives (or producers receive) and the minimum acceptable selling price. [text: E pp. 127-128; MI pp. 127-128]

Chapter 7

7. Describe how marginal utility and demand are related.

Marginal utility helps explain the downward sloping nature of the demand curve. Since additional units of consumption yield less and less utility, consumers will only consume additional units of a good if the price lowers. The consumer would rather spend additional dollars on another good with equal or greater utility, not diminishing utility. Put on a larger scale, this develops the idea that price has to lower for more quantity to be consumed, thus supporting the inverse relationship between price and quantity demanded. [text: E p. 137; MI p. 137]

16. A consumer has an income of $24 to spend each day. The only two goods the consumer is interested in purchasing are goods A and B. The marginal-utility schedules for these two goods are shown in the table below. The price of B does not change and is $2. The marginal utility per dollar from B is also shown in the table. But the price of A varies as shown in the table. The marginal utility per dollar from A when the price of A is $8 and $4 is shown in the following table.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **Good A** | | | |  | **Good B** | |
| **Quantity** |  | **MU** | **MU/$8** | **MU/$4** |  | | **MU** | **MU/$2** |
| 1 |  | 48 | 6 | 12 |  | | 24 | 12 |
| 2 |  | 32 | 4 | 8 |  | | 15 | 8 |
| 3 |  | 24 | 3 | 6 |  | | 12 | 6 |
| 4 |  | 16 | 2 | 4 |  | | 8 | 4 |
| 5 |  | 8 | 1 | 2 |  | | 6 | 3 |
| 6 |  | 4 | 0.5 | 1 |  | | 4 | 2 |

Complete the table below to show how much of A the consumer will buy each week at each of the two possible prices of A. Also, show how much B will be demanded when the price of A changes.

|  |  |  |  |
| --- | --- | --- | --- |
| **Price of A** | **Quantity of A demanded** | **Price of B** | **Quantity of B demanded** |
| $8.00 | \_\_\_\_\_ | $2.00 | \_\_\_\_\_ |
| 4.00 | \_\_\_\_\_ | 2.00 | \_\_\_\_\_ |

|  |  |  |  |
| --- | --- | --- | --- |
| **Price of A** | **Quantity of A demanded** | **Price of B** | **Quantity of B demanded** |
| $8.00 | 2 | $2.00 | 4 |
| 4.00 | 4 | 2.00 | 4 |

[text: E pp. 139-141; MI pp. 139-141]

20. Assume that a person only purchases two goods, food and clothing, and has a fixed budget constraint. Both goods are normal goods. If the price of food decreases, what will happen to the consumption of clothing based on the income effect?

The price decrease means that the real income of the person has increased. This income effect will give the person more money to spend on both food and clothing. The consumption of clothing will increase due to this income effect. [text: E pp. 140-141; MI pp. 140-141]

21. In a typical month, a family buys six bags of candy bars as snacks when the price of a bag costs $4.00. When the price of the candy bars falls to $3.00 a bag, the family buys seven bags of candy bars a month. When the price of a bag of candy bars rises to $6.00, the family buys three bags a month. Answer these questions: (a) How did the fall in the price affect real income in terms of bags of candy bars? (b) How did the rise in the price affect real income in terms of bags of candy bars? [Hint: How many bags of candy bars could the family buy in situation (a) and in situation (b) without changing the amount they spend on candy bars in a typical month?]

In the typical month, the family spends $24.00 on bags of candy bars ($4.00 × 6 bags). (a) When the price of a bag falls to $3.00 a bag that means real income measured in terms of bags of candy bars has increased by 2 bags because the family can now afford to buy 8 bags instead of 6 with the $24.00 they typically spent on candy bars. However, they decide to purchase only 7 bags ($3.00 × 7 = $21.00), so the other $3.00 can be spent on other goods. (b) When the price rises to $6.00 a bag, that means that real income measured in terms of candy bars has fallen by 2 bags because the family can now afford to buy only 4 bags instead of 6 with the $24.00 typically spent on candy bars. [text: E pp. 140-141; MI pp. 140-141]

28. How does the pricing of medical care in the United States affect the quantity consumed?

Health insurance pays most of the cost of medical care for individuals. Most individuals with health care coverage wind up paying only 20 to 30 percent of the full cost of such care. Thus, the price of medical care to the individual consumer comes at a significant discount. This “lower” price for the consumer encourages them to consume more medical care than they otherwise would if they paid the full cost for treatment. [text E p. 144; MI p. 144]

Mr. Balazs’s question

Graph and explain the relationship between marginal utility, indifference curves and a demand curve